FIG. 1 (PRIOR ART)

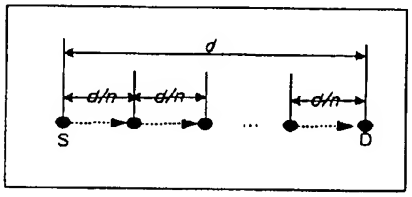

FIG. 2 (PRIOR ART)

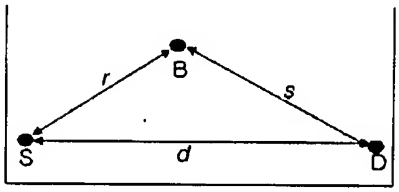

FIG. 3 (PRIOR ART)

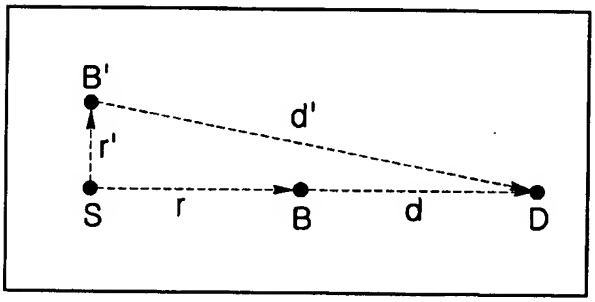

FIG. 4

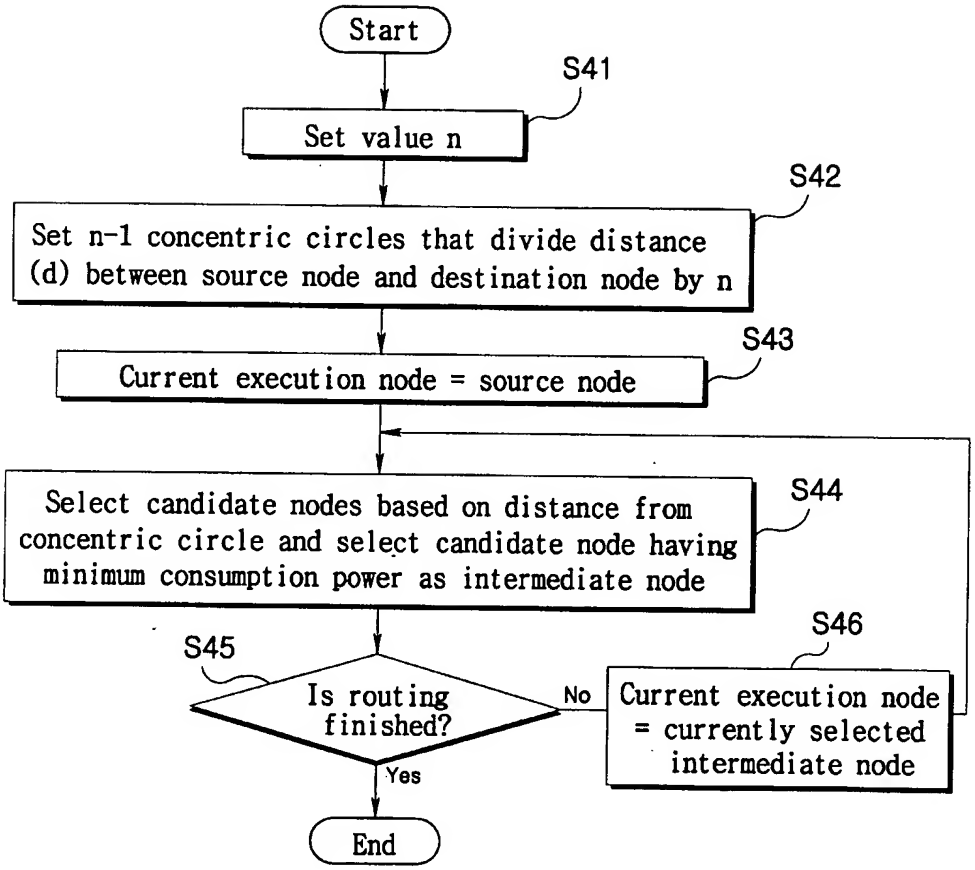
Start
S41
Set value n
S42
Set n-1 concentric circles that divide distance (d) between source node and destination node by n
S43
Current execution node = source node
S44
Select candidate nodes based on distance from concentric circle and select candidate node having minimum consumption power as intermediate node
S45
Is routing finished?
No
S46
Current execution node = currently selected intermediate node
Yes
End

FIG. 5

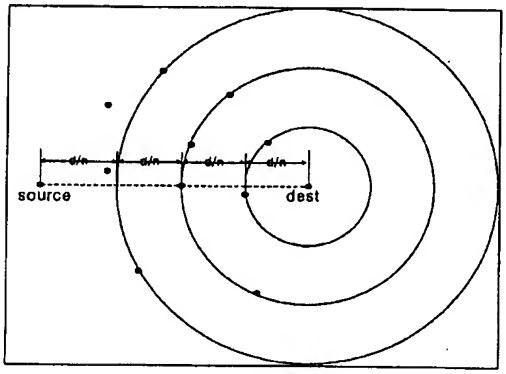

FIG. 6

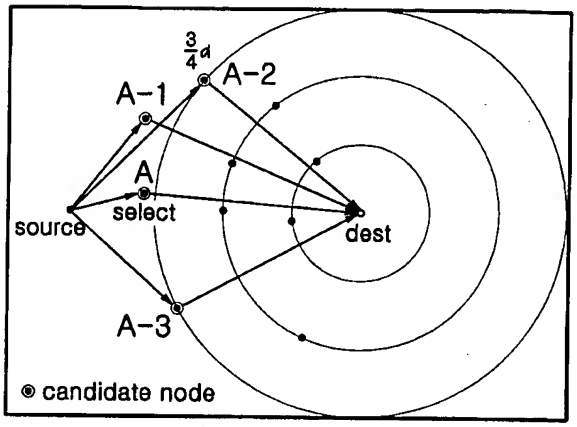
3/4d
A-1
A-2
A
select
source
dest
A-3
candidate node

FIG. 7

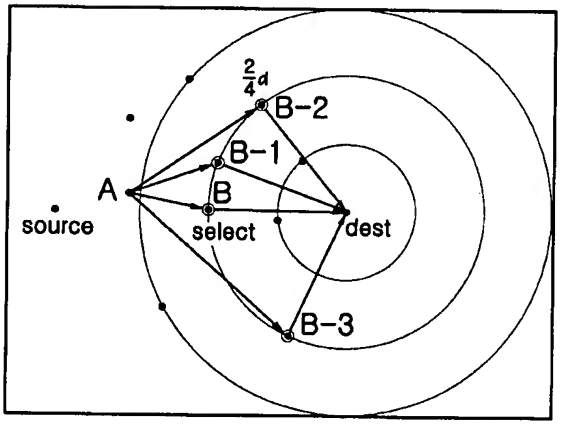
2/4d
B-2
B-1
A
B
source
select
dest
B-3

FIG. 8

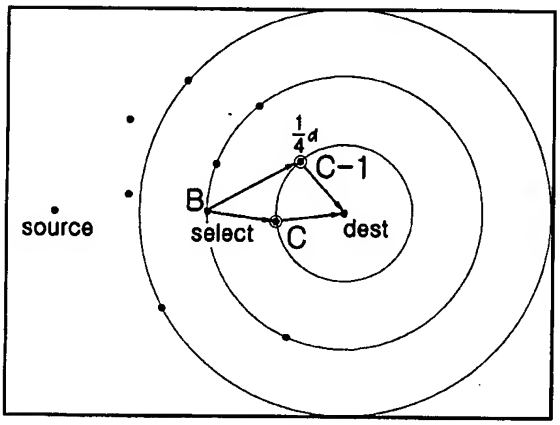

FIG. 9

S = Source node
D = Destination node
d = Distance from source to destination
N = Optimal division
B = Next node
C_i = Set of candidate nodes

$i \leftarrow 1$;
do
    if (Neighbor of the S is located interval from $\frac{d}{N}(N-i)-\frac{d}{2N}$ to $\frac{d}{N}(N-i)+\frac{d}{2N}$
        C_i includes neighbor of the S ;
    Selects the B among the C_i that minimizes the $p(S,D)=u(r)+v(s)$
    $i \leftarrow i+1$;
    $S \leftarrow B$;
while $(i \leq N)$

FIG. 10

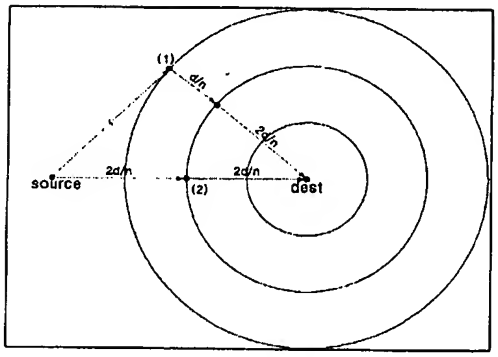

FIG. 11

S = Source node
D = Destination node
d = Distance from source to destination
N = Optimal division
B = Next node
C_i = Set of candidate nodes

$i \leftarrow 1$;
do
  if (Neighbor of the S is located interval from $\frac{d}{N}(N-i)-\frac{d}{2N}$ to $\frac{d}{N}(N-i)+\frac{d}{2N}$
    and satisfies the equality $u(r)+u(d/N) \leq u(2d/N)$
      C_i include neighbor of the S ;
  if (C_i != NULL)
      Select the B among the C_i that minimizes the $p(S, D)=u(r)+v(s)$
  else
      Select B near $d-\frac{i+1}{N}\times d$ at minimizes $p(S, D)=u(r)+v(s)$
      $i \leftarrow i+1$;
  $i \leftarrow i+1$;
  $S \leftarrow B$;
while ($i \leq N$)

FIG. 12

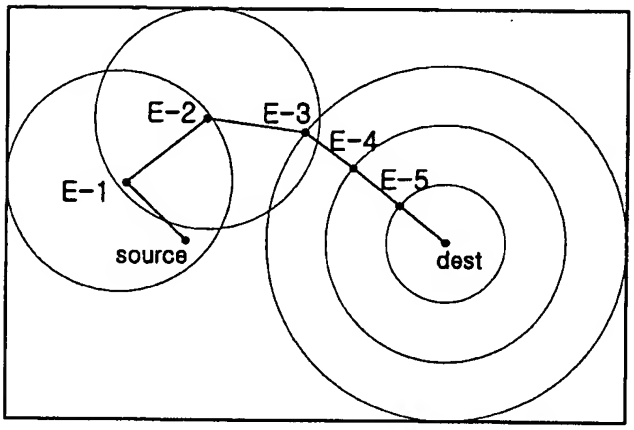

FIG. 13

S = Source node
D = Destination node
d = Distance from source to destination
N = Optimal division
B = Next node
C_i = Set of candidate nodes

$i \leftarrow 1$;
do
    if (Neighbor of the S is located interval from $\frac{d}{N}(N-i)-\frac{d}{2N}$ to $\frac{d}{N}(N-i)+\frac{d}{2N}$
    and satisfies the equality $u(r)+u(d/N) \leq u(2d/N)$
        C_i include neighbor of the S ;
    if (C_i != NULL)
        Selects the B among the C_i that minimizes the $p(S,D)=u(r)+v(s)$
    else
        Selects B near $d-\frac{i+1}{N}\times$ that minimizes $p(S,D)=u(r)+v(s)$
        $i \leftarrow i+1$;
    $i \leftarrow i+1$;
    if (B = NULL)
        Selects the B among neighbor of S that minimizes $p(S,D)=u(r)+v(s)$
        Recalculate optimal N ;
        $i \leftarrow 1$;
    $S \leftarrow B$;
while ($i \leq N$)